

Remarks/Arguments:

The above Amendments and these Remarks are in reply to the Office Action mailed July 20, 2005.

Claims 1-47 were pending in the Application prior to the outstanding Office Action. New claims 48 and 49 are added. In the Office Action, the Examiner rejected claims 1-47. Reconsideration of the rejections is requested.

The claims have been amended in view of the Examiner's discussion of the claims in the July 20, 2005 Office Action. Independent claims 1, 20 and 28 have been amended to make clear that the light guide "uses substantially total internal reflection" to more clearly distinguish from a lens-based systems. Claims 1, 20 and 28 have also been amended to remove the "adapted to" language.

Prior art LED screens, such as those disclosed by Brown, must be viewed from a long distance in order to display a homogenized color. Enclosed with this amendment is a close distance color photo showing a prior art LED display screen with forward facing red, green, and blue LEDs in each pixel and an example of a screen with substantially total internal reflectance light guide pixels. Note that the screen with the substantially total internal reflectance light guides is much less harsh and easier to look at from close distances.

Claims 1-4, 6-8, 10-12, 15, 17-19, 28, 30-32, 34-36, 38-40, and 43 are rejected under 35 USC 102(d) as being anticipated by Mochizuki U.S. Patent 6,386,720. The independent claims 1 and 28 read as follows:

1. (Currently amended): A display system comprising:
 - a group of lamps, each lamp including different colored LEDs so that the lamps can glow with different color light produced by mixing light of different colored LEDs, each lamp including a light guide using substantially total internal reflection to spread the light over a larger area; and
 - a control unit that drives the colors of the lamps in accordance with a video signal.

Claims 1 and 28 have been amended to remove the "adapted to" language and add a positive limitation as suggested by the Examiner. The Mochizuki reference does not disclose a control unit which adjusts or drives LEDs in accordance with a video signal. Mochizuki describes a backlight system. In a backlight system, light sources, such as LEDs, provide a consistent illumination on the surface of the entire backlight.

Mochizuki in figures 4 and 5 shows an acrylic plate 1, along with a number of LEDs. The LEDs are connected to a controller 1000 which adjusts the LEDs to produce a backlight. As stated in column 4 lines 61-65 of Mochizuki: “In the present embodiment, the light source device 16 adjusts the luminance of each LED in the LED group by the controller 1000, and substantially uniformizes the luminance distribution of the surface illuminant”.

The goal of Mochizuki is to produce a backlight with uniform chrominance and luminance. Once that is achieved, no further adjustment need be made to the LEDs. It is set and forget. Other LED backlight units allow for feedback on the performance of the system and for ongoing correction and adjustment. These systems still perform the same function (to maintain uniform chrominance and luminance of the backlight). They just provide it in an ongoing manner with feedback.

In Mochizuki, the intensity of the LEDs are adjusted to produce this uniform luminance distribution at the surface the acrylic plate 1. No video signals are used to adjust the controller. The controller produces a uniform luminance distribution at the surface illuminant. No video signal is used or would be useful. The LEDs are not adjusted with accordance to a video signal. The signal sent by the controller 1000 to the LEDs are used to produce a uniform luminance distribution about the acrylic plate 1. There is no reason nor is it feasible to use a video signal to produce such a uniform luminance distribution. For this reason claims 1 and 28 and their associated dependent claims are believed to be allowable over the Mochizuki reference.

Claims 28, 29 and 45-47 are rejected under 35 USC 102(b) as being anticipated by Brown U.S. Patent 5,184,114.

Brown describes a system as shown in figure 3, in which light from LEDs is sent through a lens 58. The system of Brown does not include a light guide using substantially total internal reflection as currently claimed. The lens 58 cannot be considered to be a light guide. Internal reflection is not used or desired in the lens 58 of the Brown device. For this reason, the system of Brown does not anticipate the present claim 28 or its dependent claims.

Claim 5 is rejected under 35 USC 103(a) as being unpatentable over Mochizuki in view of Puttman. Claims 9 and 37 are rejected under 35 USC 103(a) as being unpatentable over Mochizuki in view of Lekson et al. Claims 3, 14, 41 and 42 are rejected under 35 USC 103(a) as being unpatentable over Moschizuki in view of Tokunaga. Claims 16 and 44 are rejected under 35 USC 103(a) as being unpatentable over Mochizuki.

None of these references alone or in combinations include a control unit adapted to drive the colors of lamp in accordance with the video signal. Claims 20-25, and 33 are rejected under 35 USC 103(a) as being unpatentable over Brown in view of Puttman.

Claim 20 as amended reads as follows:

20. (Currently amended): A display system comprising:
a group of lamps, at least some of the lamps being greater than or equal to 20mm in pixel size and using at least one LED to produce light of different colors, the lamps including a light guide using substantially total internal reflection; and
a control unit that sets the color of the lamps in accordance with a video signal.

Brown does not include a light guide using reflection which is claimed in claim 20 of the present invention. The combination of Brown and Puttman also does not include a light guide using reflection and for that reason claim 20 and its independent claims are believed to be allowable over Brown in combination with Puttman.

Claims 26-27 were rejected under 35 USC 103(a) as being unpatentable over Brown in view of Puttman and further in view of Hue. The combination of these references does not produce the system of claim 20, since Brown in combination with the other references does not disclose the light guide with reflection in the lamps

For the above discussed reasons, claims 1-23 and 25-47 are believed to be allowable.

New claims 48-49 are not believed to be anticipated or made obvious by the cited prior art.

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: November 2, 2005

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